

Medical Health Physics Capabilities

Health physicists at Pacific Northwest National Laboratory (PNNL) are uniquely positioned to assist federal agencies and departments in developing a regulatory framework or guidance to ensure safe use of radiological medical technologies.

PNNL has successfully developed and stewarded licensing across the medical and pharmaceutical field and offers the capability of developing the licensing and radiological structure for new medical uses of radioactive materials. Health physicists have decades of combined experience writing, regulating, and evaluating license conditions for radioactive material.

- Medical Licensing Development
- Veterinary Licensing Development
- R&D Licensing Development
- Radiological Pharmacy Licensing Development

EMERGING MEDICAL TECHNOLOGY RESEARCH

Emerging medical technology requires proper research and investigation to determine safety, security, and licensing conditions for approving any new technology, including:

- Evaluation of rules and regulations as they apply to new technology



A high-dose rate afterloader used for treatment of prostate cancer using radioactive rays.

- Evaluation of radiological safety and security
- Comparison and divergence with existing technology
- Internal and external dosimetry

- Analysis of Nuclear Regulatory Commission regulation 10 CFR Part 37 regarding category 1 and 2 medical devices
- Evaluation of training and experience for authorized users

Health physicists at PNNL can provide research to help understand regulatory gaps created by emerging technologies, the development or review of sealed source and device documents, and development of licensing guidance.

RADIOACTIVE MATERIAL REGULATIONS DEVELOPMENT

PNNL health physicists are versed in the standards and procedures for establishing guidelines to new and innovative uses of radioactive material in medical settings.

- Analysis of current federal and state rules and regulations
- Experience rulemaking development
- Development of radioactive material guidance documents



Chemical radioactive contrast agent medicine for radiology, nuclear medicine, and molecular imaging.



Computed tomography scan uses ionizing radiation to create clear images of a selected area of the body.

MEDICAL FACILITY HEALTH PHYSICS

Medical facilities must meet certain criteria to use radiological materials on their site. PNNL staff have experience meeting and regulating these criteria.

- Medical facility health physics audits
- Medical facility building plan review for new builds planning to use radioactive material
- Medical facility shielding evaluations
- Development of management systems for oversight of radioactive material programs

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